



March 06, 2014

**Letter – Expression of Interest
VIA ECFS**

Chairman Thomas Wheeler
Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Commissioner Michael O’Rielly
Jonathan Chambers
Federal Communications Commission
445 12th Street, SW 20024
Washington, DC

**Re: Expression of Interest – Rural Broadband Experiments
Connect America Fund, WC Docket No. 10-90**

Dear Chairman Wheeler, Commissioners, and Mr. Chambers,

This letter is to express Clear Creek and Gilpin County Governments’ interest in participating in the Rural Broadband Experiments announced at the January 30th FCC Open Meeting. We have specific projects and wish to take this opportunity to document our need for investment in broadband infrastructure. We respectfully ask the Federal Communications Commission to consider our communities’ needs when making decisions regarding the Rural Broadband Trials and any future initiatives related to the Connect America Fund.

Background

Despite a location less than an hour west of Denver, CO, Clear Creek and Gilpin Counties are unserved in terms of FCC-defined broadband services. A recently completed Broadband Assessment commissioned by the two county governments found that, based on actual speeds (not advertised), less than 10% of businesses and residents have access to FCC-defined broadband. Conditions that contribute to this unserved state include:

- a. Not redundant: Middle mile infrastructure that is not redundant (70% of poll respondents report outages of 4 hours or more in the last year)
- b. Not abundant: Slow service offerings (70% of poll respondents depend on DSL at speeds less than FCC-defined broadband)
- c. Not affordable: Lack of faster speeds at any price short of the telephone company’s DS3 (45 Mbps/\$6,000/month, compare to Denver cable modem of \$80/month).



Geographic Territory

The Continental Divide runs along the edge of Clear Creek County. Gilpin County lies in the very rugged Foothills of the Rocky Mountains (the counties straddle Interstate 70). Trenching fiber optic cabling in the solid rock of these communities is prohibitively expensive. The rugged landscape (steep canyons, heavily forested slopes) challenges local fixed wireless service providers (WISPs, high cost per household passed relative to the Plains). However, those local fixed wireless providers strive to provide the services demanded in this market.

Proposed Technology

Our interest lies in solving our problems through a series of infrastructure improvements that will provide us with a well-integrated solution:

- a. Carrier Neutral Location (CNL or alternative to the telephone company's non-redundant central office): Our Broadband Assessment found almost 10 middle mile routes running through our counties. Unfortunately, only one middle mile provider serves the central offices from which most last mile providers source Internet bandwidth. In aggregating middle mile supply (multiple middle miles) in CNLs in our larger towns, we can ensure our broadband environment is "redundant, abundant and affordable".

Clear Creek/Gilpin Counties Carrier Neutral Locations

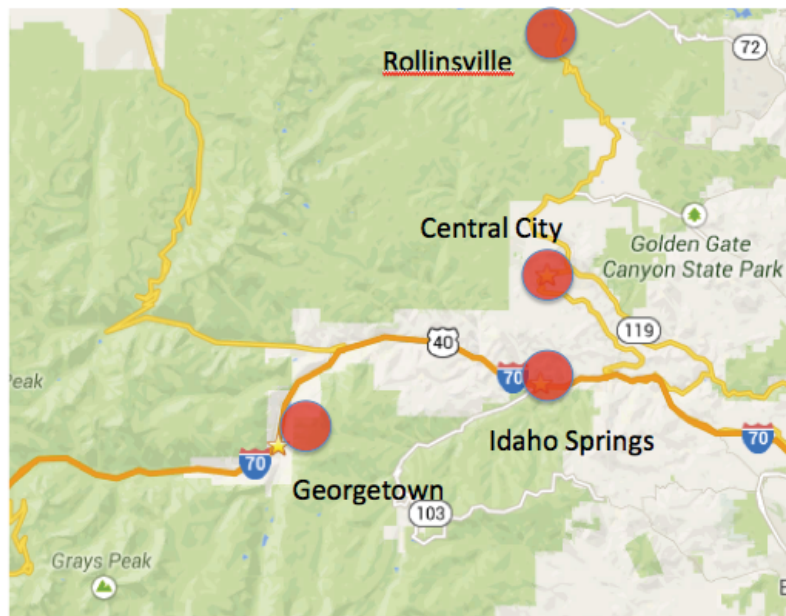


Figure 1 CNLs will ensure broadband is "redundant, abundant, and affordable" in Clear Creek and Gilpin counties



- b. Distributed Antenna system (DAS): enabling an efficient cellular-to-Wi-Fi offload would offer an efficient use of the limited middle mile bandwidth available on demand. Given the high levels of tourism traffic along the Interstate 70 corridor, residents find themselves in competition for internet bandwidth at peak visiting periods. At off-peak times, our residents, especially K12 students could be taking advantage of the fast Wi-Fi services a DAS can present our communities.

Wi-Fi/DAS

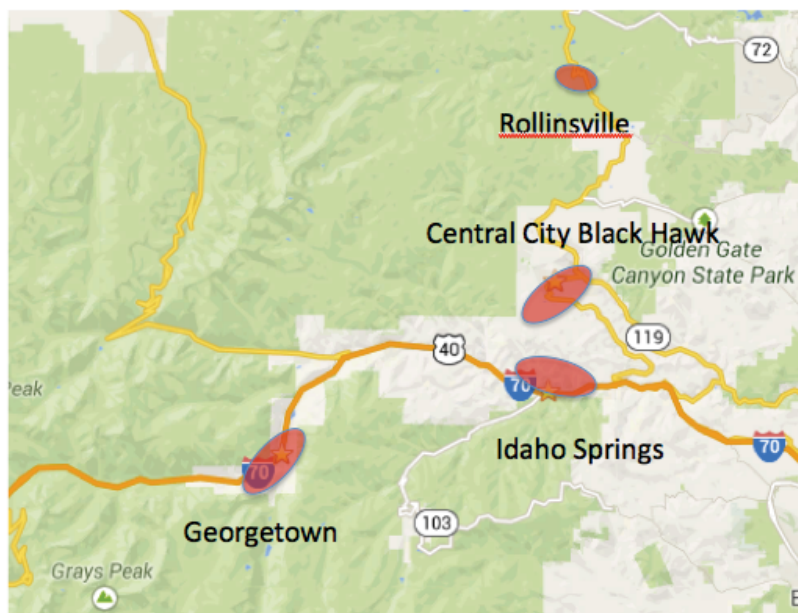


Figure 2 Distributed Antenna Systems in towns of Clear Creek and Gilpin counties will bring broadband for residents and visitors alike



- c. TV White Space fixed wireless: many households lie in steep, forested canyons along our county roads making delivery of telecommunications services for First Responders and residents alike nearly impossible. TV white space fixed wireless solutions from adaptrum™ can support our First Responders on 700 MHz and our rural residents can access the Internet at FCC-defined broadband speeds via TV White Space fixed wireless platforms.

TV Whitespace

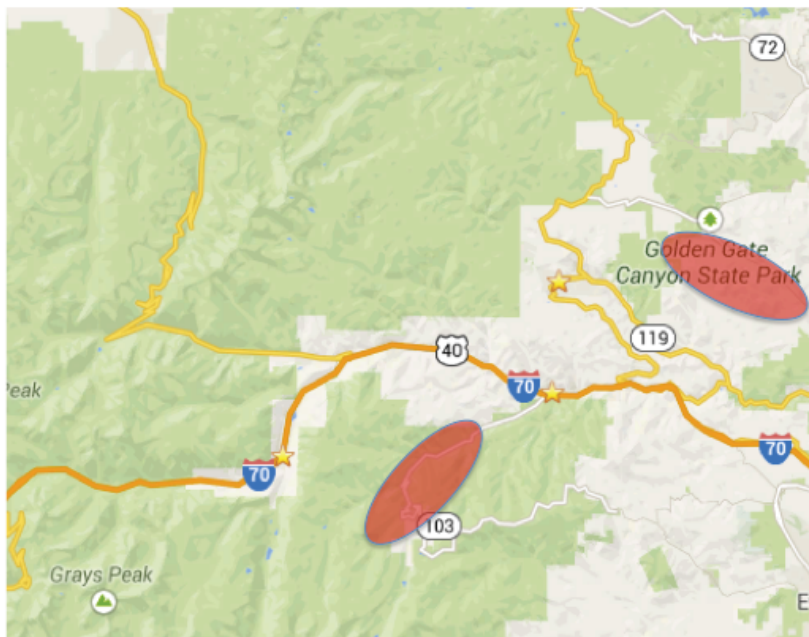


Figure 3 TV White Space technology can support our First Responders and rural residents in difficult to serve terrain



- d. Peer-to-Peer wireless: 802.11ac peer-to-peer technology offers a low-cost, innovative means for First Responders to deploy high-bandwidth wireless networks on-demand. Recent forest fires and a one-in-a-millennia flood in our region wiped out telecommunications networks. Our First Responders need platforms that allow them to deploy replacement emergency communications on very short notice. This technology also allows a collaborative approach for our rural residents to provision wireless broadband community networks.

Peer to Peer Wireless

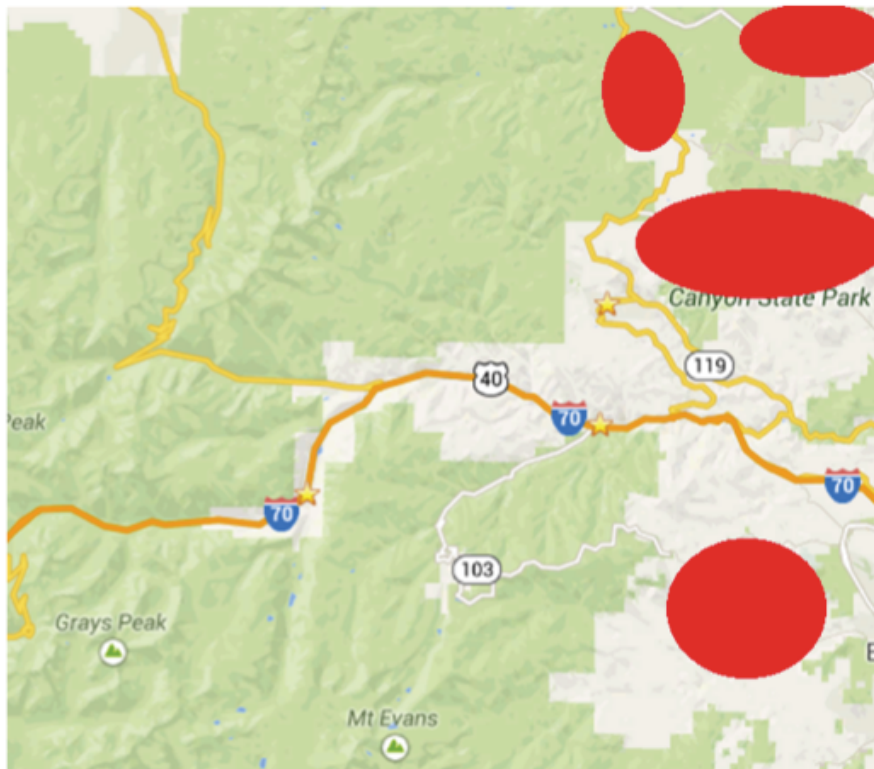


Figure 4 Our mountainous terrain renders conventional wireless telecommunications useless. P2P technologies can overcome the high cost of deploying First Responder networks in hard to reach parts of our region.



- e. Fixed wireless: This is the most cost effective means of delivering broadband to our unserved citizens. In terms of cost per home passed, no other technology can match the matrix of: a) throughput b) costs and c) time-to-deploy of fixed wireless. Furthermore, no other technology can support our First Responders in delivering high bandwidth applications (video, still photos, VoIP, etc) in the many hard to reach corners, valleys, mountains and forests of Clear Creek and Gilpin counties.

Fixed Wireless

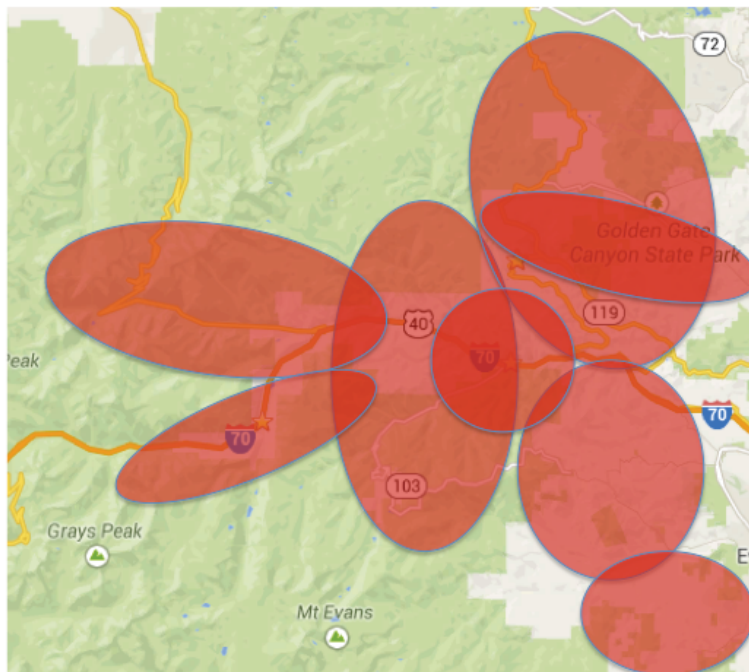


Figure 5 Fixed wireless is the most economical technology for bringing broadband to our communities



f. Redundant middle mile: Last September's once-in-a-millennia flood in Gilpin and neighboring Boulder County served a warning to county planners for the need for telecommunications that are "redundant, abundant and affordable". The same is true for our business community, which cannot compete in a 21st century global economy with frequent and prolonged network outages.

Survivable Communications

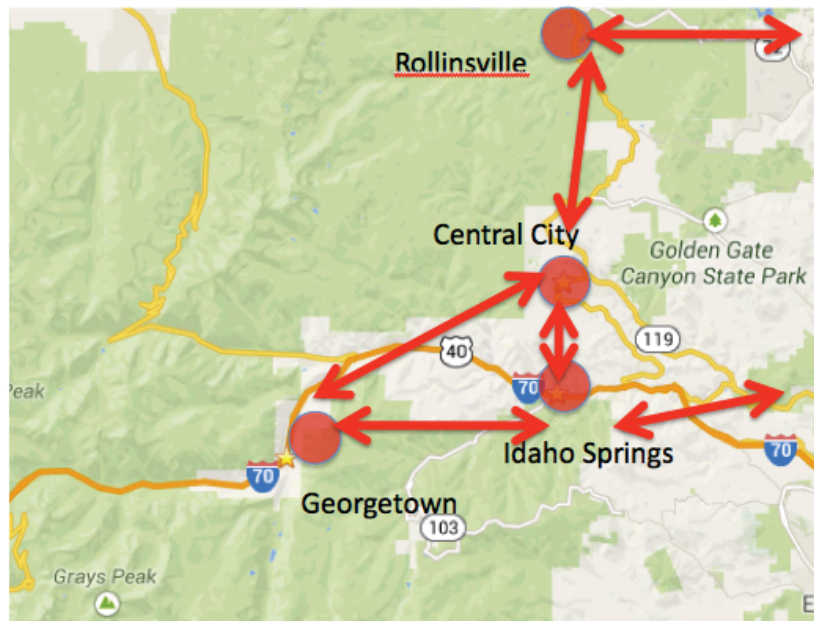


Figure 6 Current telecommunications depend on a middle mile single point of failure (SPOF): the telephone company's single middle mile. A new middle mile ring is required.



We Are Unserved

Approximately \$43,000 per year is paid to the incumbent telco in FCC High Cost and Extremely High Cost subsidies for Clear Creek County.



Figure 7 FCC data stating Gilpin County is ineligible for this program.

FCC data shows (see map based on eligible census tracts) Gilpin County, which lies on the opposite side of Interstate 70 as being “served” in terms of FCC-defined broadband. Data from our recent Broadband Assessment (actual not advertised speeds) indicates the vast majority of Gilpin County is unserved in terms of FCC-defined broadband.

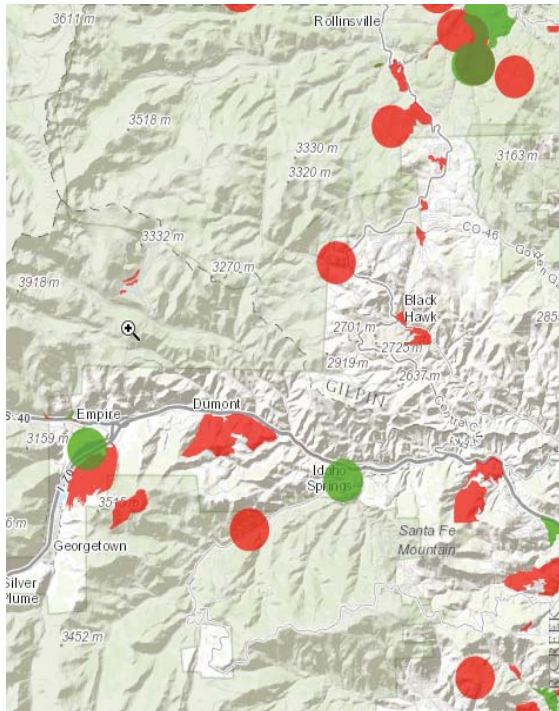


Figure 8 Results of actual speeds data gathered for National Broadband Map by State of Colorado.

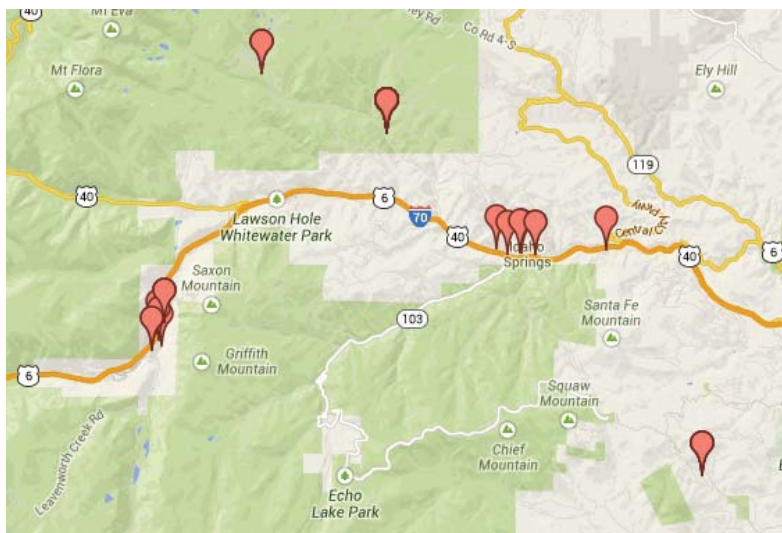


Figure 9 Of thousands of speed tests gathered for County Broadband Assessment, only a handful qualify as FCC-defined broadband (DSL-clustered near central offices in Idaho Springs and Georgetown)

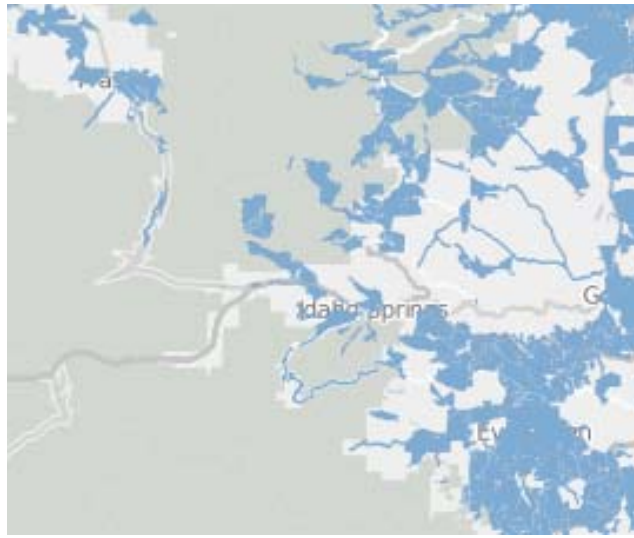


Figure 10 National Broadband Map: Gilpin County is unserved (wireline); it appears some service providers may have over stated road segments coverage



Figure 11 National Broadband Map: Fixed wireless serves the mountaintops but not where people live-the valleys

In conclusion, our communities are unserved in terms of availability of FCC-defined broadband services.



Sample of Community Anchor Demand and Existing Providers

Location	Provider	Type	Monthly cost	Would Like to Buy (Mbps)
City of Black Hawk	CenturyLink	13 Mbps Bonded pair of T1's and high speed over copper	\$1,200.00	100 Mbps
Riviera Black Hawk, Monarch Black Hawk Inc.	Century Link and Integra Telecomm	DS3 and T-1	\$5,700 for our DS3 and \$650 for the 10MB T-1 pipe.	100 Mbps
Gilpin County Garage	Cbeyond, (re seller CenturyLink) USACommunications	T1s and Cable modem	Not reported	5 Mbps
Gilpin County Courthouse	Cbeyond, (re seller CenturyLink) USACommunications	T1s and Cable modem		20 Mbps
Gilpin County Government	Cbeyond, (re seller CenturyLink) USACommunications	T1s and Cable modem		10 Mbps
Gilpin County Sheriff's Department	Cbeyond, (re seller CenturyLink) USACommunications	T1s and Cable modem		10 Mbps



Gilpin County Government	Cbeyond, (re seller CenturyLink) USACommunica-tions	T1s and Cable modem		10 Mbps
Gilpin County Recreation Center	Cbeyond, (re seller CenturyLink) USACommunica-tions	T1s and Cable modem		10 Mbps
Gilpin County Community Center	Cbeyond, (re seller CenturyLink) USACommunica-tions	T1s and Cable modem		10 mbps
Gilpin County Government	Cbeyond, (re seller CenturyLink) USACommunica-tions	T1s and Cable modem		10 Mbps
Home office, B&B	Century Link DSL		\$57 for Internet & phone	10 Mbps
Idaho Springs City Government	Century link	15 mbps	\$520.00	
Clear Creek School District	CenturyLink	100 Mbps QMOE Fiber Connecti-on from CenturyL ink	\$870.00	100 Mbps

Table 1 Sample poll results from Broadband Assessment re: service providers and service offerings



Town	Providers
Silver Plume	CenturyLink AT&T Verizon T-Mobile
Georgetown	CenturyLink AT&T Verizon Sprint
Idaho Springs	CenturyLink AT&T Verizon Sprint T-Mobile JAB Broadband Comcast
Central City	CenturyLink AT&T Verizon Sprint USA Communications
Blackhawk	CenturyLink AT&T Verizon Sprint JAB Broadband USA Communications
Rollinsville	CenturyLink AT&T Mountain Broadband Nedernet

Table 2 There are many service providers and the speeds offered are consistently slow.



Project Timeline

A Request for Proposal (RFP) process followed the publishing of our Broadband Assessment.

Responses included:

- a. 2 proposals from wireless internet service providers offering redundant middle mile and extensive fixed wireless last mile services including TV White Space deployments.
- b. 1 proposal for Wi-Fi/Distributed Antenna Systems
- c. 1 city planning department proposal for carrier neutral locations

As a result, Clear Creek and Gilpin County Governments have completed much of the initial planning, identified the vendor system integrators and can begin construction in the 2015 construction season (due to mountain weather, May through November).

Investment Needed

Item	Cost
Carrier Neutral Locations	\$350,000
Fixed Wireless	\$300,000
Wi-Fi DAS	\$300,000
TV White Space	\$100,000
Peer-to-Peer Wireless	\$100,000
Redundant Middle Mile(s)	\$1,000,000
TOTAL	\$2,150,000

Total Project Cost

To be determined.



Local Government Participation

Clear Creek County Government
Gilpin County Government
City of Central City
Town of Black Hawk
Town of Idaho Springs
Town of Georgetown
Town of Empire
Town of Rollinsville
Town of Silver Plume
Clear Creek county School District
Gilpin School District

List of Anchor Institutions

Schools:

Clear Creek County School District,
Gilpin School District

Libraries:

Gilpin County Library District
Clear Creek county Library District

Healthcare:

Meadows Family Medical Center

City offices:

City of Central City
City of Black Hawk
Town of Idaho Springs
Town of Georgetown
Town of Empire
Town of Rollinsville
Town of Silver Plume

County Governments:


Clear Creek County Government
Gilpin County Government



Thank you for considering our Expression of Interest in your decisions about the amount of funding that will be allocated in the Rural Broadband Experiments. We commend the FCC in this effort to connect rural communities and are ready to help you close the digital divide.

Sincerely,


Gail Watson – Chair
Gilpin County Commissioner
Gilpin County, Colorado


Phil Buckland
Clear Creek County Commissioner
Clear Creek County, Colorado